

SUMMARY

Ashland pitch has been compared with Reilly pitch, the standard anode pitch at Columbia Falls, by preparation and testing of laboratory composites with ARCO coke using the standard Columbia Falls aggregate sizing. The study is not yet complete but has shown that baked composites with Reilly pitch are 0.02-0.04 g/cc more dense than those with Ashland pitch. This is an important advantage of the coal-tar pitched composites which should produce better anode performance. Compressive strength and electrical resistivity of these composites have also been measured. However, final judgement of the composites cannot be made until measurements of porosity, airburn, CO₂ reactivity and electrolytic carbon consumption have been made.

PROGRAM OBJECTIVES

This is an investigation of Ashland-240 Petroleum Pitch in consideration of its possible use as a Soderberg anode binder at Columbia Falls. Potential advantages of such a pitch over standard coal-tar pitch are (1) improved working conditions from reduced environmental emissions, (2) a possible cost advantage, and (3) an alternate reliable binder source.

1983 SPECIFIC OBJECTIVES

- (1) Complete the laboratory comparison of Ashland and Reilly-pitched ARCO coke composites.
- (2) From analysis of all laboratory data determine the value of Ashland pitch as a Soderberg binder for Columbia Falls.
- (3) Write a final report on this Ashland pitch evaluation.

PROGRESS TO DATE

- o Have produced enough baked carbon to test.
- o Have measured density, strength and resistivity of baked carbon.
- o Results to date indicate Ashland composites are inferior to coal-tar pitched composites.

Account No. 11002 (Continued)

KEY ISSUES

- o Setup and testing new laboratory equipment for airburn and CO₂ reactivity measurement.
- o Setup and testing new laboratory apparatus for the electrolytic anode consumption test.
- o Cutback in funds and personnel for carbon laboratory work.

FINANCIAL STATUS

1983 Budget Allocations

Prior Spending

1984 Project Requirements